

Application Serial No.: 09/617,460  
Amendment dated: 07/05/2004

Reply to Office action of: 04/05/2004  
Attorney Docket No.: ARC9-2000-0116 US1

**AMENDMENT TO THE SPECIFICATION**

Page 16 of the specification, please replace the paragraph starting at line 8 with the following paragraph:

"Referring now to FIG. 5, it shows the crawling protection system 10 using a first transcoding technique [[451]] 351 of the present invention. According to this illustrative example, either or both the crawler 305 and the browser (or graphic user interface, GUI) 310 send queries to the web server 15. In response to these queries, the web server 15 retrieves the desired data from the data sources or repository 320."

Page 17 of the specification, please replace the paragraph starting at line 5 with the following paragraph:

"To this end, the first transcoding technique [[451]] 351 involves dynamically changing the structure of the web form 400. Certain crawlers 305 extract data by searching the web page for specific HTML elements and use them as anchors. For example, the crawler 305 can search for, and use the third table, fifth row, second column as anchors. This crawling technique will cause the search to fail or to produce invalid results since the transcoding technique modifies the page structure every time a web server sends the page to the user (i.e., crawler 305, browser 310). In one embodiment, existing tables can be nested further, empty tables, rows or columns can be inserted, and/or simple lists can be replaced by tables."

Page 19 of the specification, please replace the paragraph starting at line 18 with the following paragraph:

"Referring now to FIG. 6, it shows the crawling protection system 10 using a second transcoding technique [[452]] 352 of the present invention. Similarly to

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the foregoing description of FIG. 5, either or both the crawler 305 and the browser 310 send queries to the web server 15. In response to these queries, the web server 15 retrieves the desired data from the data sources or repository 320.

Page 20 of the specification, please replace the paragraph starting at line 13 with the following paragraph:

"To this end, the second transcoding technique ~~[[452]]~~ 352 involves dynamically changing the content of the web form 400 but not its structure. Certain crawlers 305 extract data by searching a web page for a keyword or phrase, which in this example is "Price". Then, using the location of this keyword or phrase as an anchor, the crawlers 305 extract the content data of interest, such as price value. "

Page 22 of the specification, please replace the paragraph starting at line 15 with the following paragraph:

"Referring now to FIG. 7, it shows the crawling protection system 10 using a third transcoding technique ~~[[453]]~~ 353 of the present invention. Either or both the crawler 305 and the browser 310 start by accessing the web server 15 that returns a log in page or form 500 to the requesting crawler 305 or browser 310. The log in page 500 typically includes one or more variables, each of which is comprised of a variable name 505 and a variable value. Conventionally, the crawler 305 or the browser (e.g. user) 310 fills in the variable values and submits the completed log in page 500 back to the web server 15. The web server 15 validates the variable names and values in the log in page 500, and based thereon, retrieves the desired data from the data sources or repository 320 and forwards the retrieved data to the crawler 305 and/or the browser 310."

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Page 26 of the specification, please replace the paragraph starting at line 2 with the following paragraph:

"Referring now to FIG. 8, it shows the crawling protection system 10 using a fourth transcoding technique [[454]] 354 of the present invention. Either or both the crawler 305 and the browser 310 send queries to the web server 15. In response to these queries, the web server 15 retrieves the desired data from the data sources or repository 320."

Page 26 of the specification, please replace the paragraph starting at line 19 with the following paragraph:

"To this end, the fourth transcoding technique [[454]] 354 involves using dynamic images to display text data. Many crawlers exclusively search the textual content of web pages. These crawlers ignore inline images, even when these images contain critical text elements. According to this protection technique, the transcoding proxy 315 alters the HTML content of the original web form 400 by replacing text elements, i.e., the price column 405, with their image counterparts on the fly. The resulting manipulated web form 410 is readable by the browser 310, but not by the crawler 305 due to the crawler's inability to detect and the text elements that have been converted into images or to another similar format not readily recognizable by the crawler 305."

Page 30 of the specification, please replace the paragraph starting at line 12 with the following paragraph:

"To this end, the sixth transcoding technique [[454]] 354 involves using an executable application such as JavaScript® to dynamically generate the web page to be displayed by the browser 310. Many robots exclusively search the static HTML code of the web page. According to this technique, a web server

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can alter the HTML content of the web page by replacing the static HTML code with JavaScript® code fragments that, for example, "print" the HTML content when executed. Alternatively, the HTML content of the web page can be encrypted by the server and decrypted by the JavaScript® code."

Page 27 of the specification, please replace the paragraph starting at line 7 with the following paragraph:

"Referring to FIG. 9, it shows the crawling protection system 10 using a fifth transcoding technique [[455]] 355 of the present invention. Either or both the crawler 305 and the browser 310 start by accessing the web server 15 that returns a log in page or form 500 to the requesting crawler 305 or browser 310. The log in page 500 typically includes variable labels 550 and corresponding variable names 505 (FIG. 7) and variable values. Conventionally, the crawler 305 or the browser (e.g. user) 310 fills in the variable values that correspond to the labels 550, and submits the completed log in page 500 back to the web server 15. The web server 15 validates the variable names and values in the log in page 500, and based thereon, retrieves the desired data from the data sources or repository 320 and forwards the retrieved data to the crawler 305 and/or the browser 310.

Page 29 of the specification, please replace the paragraph starting at line 19 with the following paragraph:

"Referring now to FIG. 10, it shows the crawling protection system 10 using a sixth transcoding technique [[456]] 356 of the present invention. Either or both the crawler 305 and the browser 310 send queries to the web server 15. In response to these queries, the web server 15 retrieves the desired data from the data sources or repository 320."